BIHAR STATE POWER TRANSMISSION COMPANY LTD.

[A Government of Bihar Undertaking]

132/33 KV GSS BENIPUR

APPRENTICESHIP TRANING REPORT

PRECENTED BY-

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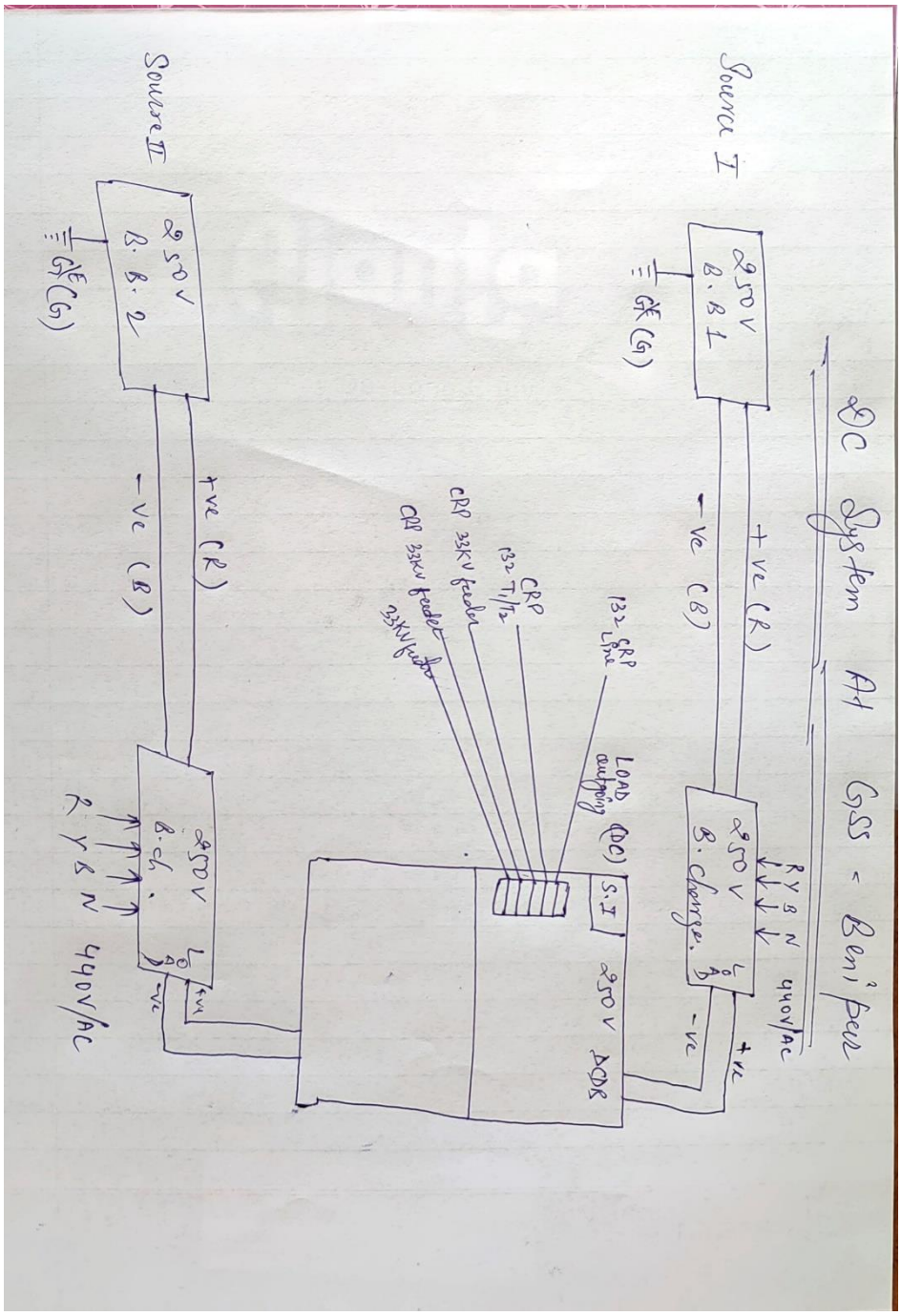
ABRDA4646359

DC System layout Of Benipur GSS



BATTERY ROOM

- In battery Room 112v no. of cell in one battery bank each have 2.2v = 250v , in battery room there are two 250v and two 48v battery bank available
- When more than one cells are connected together, it will be a battery.
- The battery room is also known as heart of the substation.
- Substation batteries typically provide DC supplies for

protection and control equipment (principally relays), and

also provide trip and close current to circuit breakers.

- In substations rechargeable batteries are used.

- In Benipur GSS

1. 250v battery bank: - 112 no. of cell, each cell rating

2.2 v dc
300AH

2. 48v battery bank:- 22 no. of cell , each cell rating

2.2v dc
300AH

In gss benipur dry cell used in battery bank .it is also known as VRLA [Valve regulated lead acid battery]

SOME PICTURE OF BATTERY ROOM OF GSS BENIPUR

Battery bank no.1/250v

Battery bank no.2 /250v

Battery bank no.2/48v

Battery bank no.1/48v

BATTREY CHARGEER

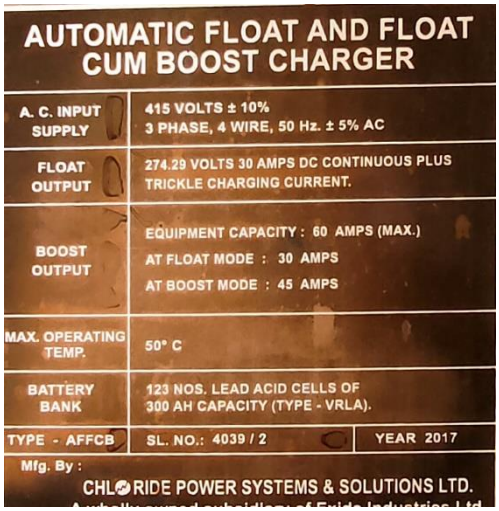
A battery charger, recharger, or simply charger, is a device that stores energy in a battery by running an electric current through it. The charging protocol (how much voltage or current for how long, and what to do when charging is complete) depends on the size and type of the battery being charged.

IN GSS BENIPUR: -

Two type of battery charger used

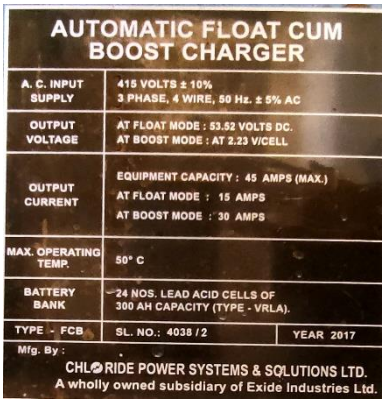
1. battery charger no.1 of 250v
   Rating
   At Float mode- 30A
   At boost mode-45A

   Battery bank:- 112 nos.lead Acid cells of 300AH capacity [VRLA]


AUTOMATIC FLOAT AND FLOAT CUM BOOST CHARGER
A. C. INPUT SUPPLY
415 VOLTS ± 10%
3 PHASE, 4 WIRE, 50 Hz. ± 5% AC
FLOAT OUTPUT
274.29 VOLTS 30 AMPS DC CONTINUOUS PLUS TRICKLE CHARGING CURRENT.
BOOST OUTPUT
EQUIPMENT CAPACITY : 60 AMPS (MAX.)
AT FLOAT MODE : 30 AMPS
AT BOOST MODE : 45 AMPS
MAX. OPERATING TEMP.
50° C
BATTERY BANK
123 NOS. LEAD ACID CELLS OF 300 AH CAPACITY (TYPE - VRLA).
TYPE - AFFCB
SL. NO.: 4039 / 2
YEAR 2017
Mfg. By :
CHLORIDE POWER SYSTEMS & SOLUTIONS LTD.

2. battery charger no.1 of 48v
   Rating
   At Float mode - 15
   At boost mode - 30-35A
   Battery bank: - 22 nos. lead Acid cells of 300AH capacity

   [VRLA]


AUTOMATIC FLOAT CUM BOOST CHARGER
A. C. INPUT SUPPLY
415 VOLTS ± 10%
3 PHASE, 4 WIRE, 50 Hz. ± 5% AC
OUTPUT VOLTAGE
AT FLOAT MODE : 53.52 VOLTS DC.
AT BOOST MODE : AT 2.23 V/CELL
OUTPUT CURRENT
EQUIPMENT CAPACITY : 45 AMPS (MAX.)
AT FLOAT MODE : 15 AMPS
AT BOOST MODE : 30 AMPS
MAX. OPERATING TEMP.
50° C
BATTERY BANK
24 NOS. LEAD ACID CELLS OF 300 AH CAPACITY (TYPE - VRLA).
TYPE - FCB
SL. NO.: 4038 / 2
YEAR 2017
Mfg. By :
CHLORIDE POWER SYSTEMS & SOLUTIONS LTD.
A wholly owned subsidiary of Exide Industries Ltd.

SOME PICTURE OF BATTERY CHARGER. GSS BENIPUR

250v battery charger no.1

250v battery charger no.2

48v battery charger no.1

48v battery charger no.2

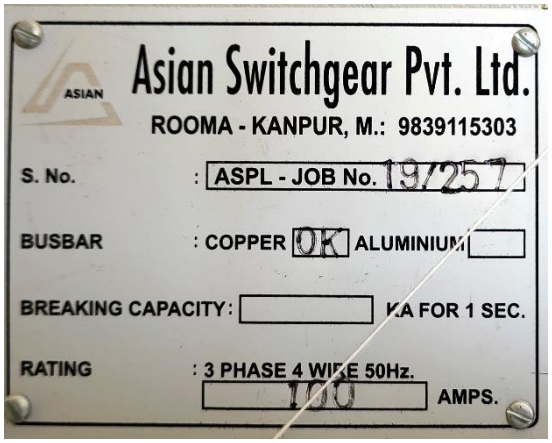
DCDB [Direct Current Distribution Box]

D-C-D-B: DC Distribution Board [D-C-D-B: DC Distribution Board]
As the name says DCDB is used for DC Distribution to different load points. DC is distributed to different load points through their respective MCCBs. There are battery earth fault relays, DC under-voltage or over-voltage relays for protection purposes, installed in DCDB

In GSS benipur There are Two type of DCDB

1. 250v DC
   Used in; -
   *Panel relay
   *Panel auxiliary relay
   * Both side breaker for operating coil.

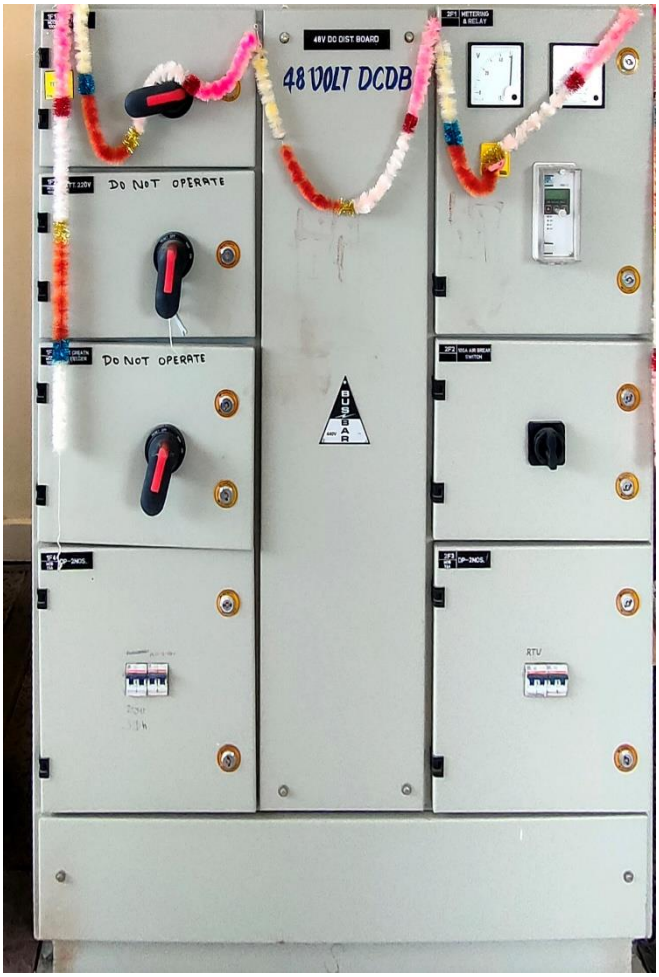
2. 48v DC
   Used in: -
   - PLCC [for communication and protection]
   - SDH [tejas]



SOME PICTURE OF DCDB
GSS BENIPUR

250v DCDB

48 DCDB

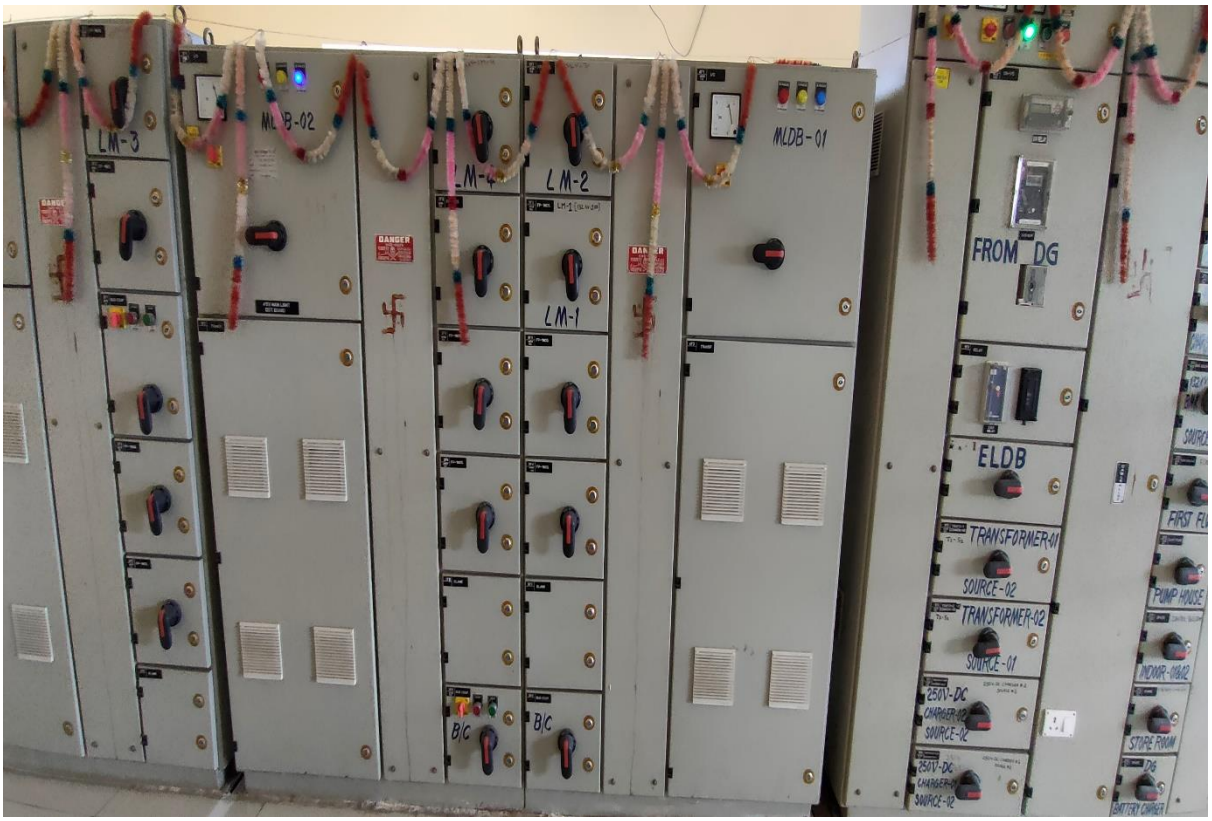


SWITCHGEAR ROOM

DANGER
4F1 I/C-II
SST-02
SST-01
5F1 ACDB
ACDB-02
5F2 SPARE
4F2 METERING
5F3 MLDB
MLDB-02
4F3 RELAY
5F4 BLANK
5F5 BLANK

TESTED OK
1F1 OIL FILT SOCKET
1F1 I/C-1
SST-01
2F1 ACDB
ACDB-01
2F2 METERING
2F3 MLDB
MLDB-01
2F4 SPARE
2F5 RELAY
UV RELAY

SST-01
BUS COUPLER
SST-02
ACDB-02
ACDB-01
MLDB-01
MLDB-02


LM-3
LM-4
LM-2
LM-1
MLDB-01
FROM DG
ELDB
TRANSFORMER-01
SOURCE-02
TRANSFORMER-02
SOURCE-01
B/C
B/C
PUMP HOUSE
STORE ROOM

THANK YOU